

We Claim:

1. A reinforcement device for use with a circular stapler that is adapted to create and seal a surgical opening in a patient comprising:

a buttress adapted for mounting on the circular stapler, the stapler having an anvil that is larger in diameter than the surgical opening that is created by the stapler, wherein following stapling with the stapler, the buttress reinforces the surgical opening created by the stapler in the patient;

wherein the buttress includes at least one adaptive opening created by the circular stapler which corresponds to the surgical opening in the patient, said adaptive opening when circular having a diameter smaller than the diameter of the anvil, and wherein the adaptive opening in the buttress allows the anvil to be removed therethrough without causing permanent alteration to the buttress.

2. The reinforcement device of claim 1 wherein the permanent alteration includes tearing.

3. The reinforcement device of claim 1 wherein the permanent alteration includes permanent deformation to the adaptive opening created by the stapler.

4. The reinforcement device of claim 1 wherein the buttress has slits along a periphery of the adaptive opening.

5. The reinforcement device of claim 1 wherein the buttress is corrugated along a periphery of the adaptive opening.

6. The reinforcement device of claim 1 wherein the buttress self-aligns on the stapler.

7. The reinforcement device of claim 6 wherein the self-aligned buttress is retained on the stapler without use of an adhesive.

8. The reinforcement device of claim 6 wherein the buttress self-aligns with respect to a central shaft on the stapler.

9. The reinforcement device of claim 6 wherein the buttress self-aligns on the stapler by conforming to an edge delimiting an outer diameter of the stapler.

10. The reinforcement device of claim 1 wherein the reinforcement buttress comprises a bioabsorbable material.

11. The reinforcement device of claim 10, wherein the bioabsorbable material comprises a copolymer of poly(glycolide:trimethylene carbonate).

12. The reinforcement device of claim 1 wherein the buttress includes a filler material.

13. The reinforcement device of claim 12 wherein the filler material comprises a therapeutic agent.

14. The reinforcement device of claim 12 wherein the filler material comprises a bioactive agent.

15. The reinforcement device of claim 1 wherein the buttress comprises an essentially inelastic material.
16. The reinforcement device of claim 1 wherein the buttress comprises an essentially elastic material.
17. The reinforcement device of claim 1 wherein the buttress comprises at least one polymeric material.
18. The reinforcement device of claim 17 wherein the polymeric material comprises polytetrafluoroethylene.
19. The reinforcement device of claim 18 wherein the polytetrafluoroethylene is porous expanded polytetrafluoroethylene.
20. The reinforcement device of claim 1 wherein the circular stapler is adapted to create an anastomotic junction between body tissue; and the buttress augments resistance to radial distension at the anastomotic junction.
21. The reinforcement device of claim 1 wherein the device has a reinforced central region that provides added rigidity to the central region.
22. The reinforcement device of claim 21 wherein the central region has greater thickness than other regions of the device.
23. The reinforcement device of claim 21 wherein the central region has denser material than other regions of the device.
24. A reinforcement device for use with a circular stapler that is adapted to create a substantially circular hole in a patient, said circular stapler having a central shaft, comprising:
  - a buttress adapted for mounting on the central shaft of the circular stapler;
  - wherein the buttress self-aligns around the central shaft; and
  - wherein the buttress reinforces the hole created by the stapler in the patient.
25. The reinforcement device of claim 24 wherein the stapler includes an anvil that is larger in diameter than the circular hole that is created by the stapler.
26. The reinforcement device of claim 24 wherein the buttress comprises an essentially elastic material.
27. The reinforcement device of claim 24 wherein the buttress comprises an essentially inelastic material.
28. The reinforcement device of claim 24 wherein the buttress comprises at least one polymeric material.
29. The reinforcement device of claim 28 wherein the polymeric material comprises polytetrafluoroethylene.
30. The reinforcement device of claim 29 wherein the polytetrafluoroethylene is porous expanded polytetrafluoroethylene.

31. The reinforcement device of claim 24 wherein the buttress comprises a bioabsorbable material.
32. The reinforcement device of claim 31, wherein the bioabsorbable material comprises a copolymer of poly(glycolide:trimethylene carbonate).
33. The reinforcement device of claim 24 wherein the buttress includes a filler.
34. The reinforcement device of claim 33 wherein the filler includes a therapeutic agent.
35. The reinforcement device of claim 33 wherein the filler includes a bioactive agent.
36. A reinforcement device comprising: a circular stapler that is adapted to create a substantially circular hole in a patient, said circular stapler having a stapler anvil compression surface outer diameter and a stapler body compression surface outer diameter; a first buttress adapted to self align onto the stapler anvil compression surface outer diameter and the stapler body compression surface outer diameter; a second buttress adapted to self align onto the stapler body compression surface outer diameter; and wherein the first and second buttresses reinforce the hole created by the stapler in the patient when staples are applied.
37. The reinforcement device of claim 36 wherein the stapler includes an anvil that is larger in diameter than the circular hole that is created by the stapler.
38. The reinforcement device of claim 36 wherein the buttress comprises an essentially elastic material.
39. The reinforcement device of claim 36 wherein the buttress comprises an essentially inelastic material.
40. The reinforcement device of claim 36 wherein the buttress comprises at least one polymeric material.
41. The reinforcement device of claim 40 wherein the polymeric material comprises polytetrafluoroethylene.
42. The reinforcement device of claim 41 wherein the polytetrafluoroethylene is porous expanded polytetrafluoroethylene.
43. The reinforcement device of claim 36 wherein the buttress comprises a bioabsorbable material.
44. The reinforcement device of claim 43, wherein the bioabsorbable material comprises a copolymer of poly(glycolide:trimethylene carbonate).
45. The reinforcement device of claim 36 wherein the buttress includes a filler.
46. The reinforcement device of claim 45 wherein the filler includes a therapeutic agent.
47. The reinforcement device of claim 45 wherein the filler includes a bioactive agent.
48. A reinforcement device comprising: a circular stapler that is adapted to create a substantially circular hole in a patient, said circular stapler having a stapler anvil

compression surface outer diameter at least one buttress adapted to self align onto the stapler anvil compression surface outer diameter; and

wherein the buttress reinforces the hole created by the stapler in the patient when staples are applied.

49. The reinforcement device of claim 48 wherein the stapler includes an anvil that is larger in diameter than the circular hole that is created by the stapler.

50. The reinforcement device of claim 48 wherein the buttress comprises an essentially elastic material.

51. The reinforcement device of claim 48 wherein the buttress comprises an essentially inelastic material.

52. The reinforcement device of claim 48 wherein the buttress comprises at least one polymeric material.

53. The reinforcement device of claim 52 wherein the polymeric material comprises polytetrafluoroethylene.

54. The reinforcement device of claim 53 wherein the polytetrafluoroethylene is porous expanded polytetrafluoroethylene.

55. The reinforcement device of claim 48 wherein the buttress comprises a bioabsorbable material.

56. The reinforcement device of claim 55, wherein the bioabsorbable material comprises a copolymer of poly(glycolide:trimethylene carbonate).

57. The reinforcement device of claim 48 wherein the buttress includes a filler.

58. The reinforcement device of claim 57 wherein the filler includes a therapeutic agent.

59. The reinforcement device of claim 57 wherein the filler includes a bioactive agent.

60. A reinforcement device comprising: a circular stapler that is adapted to create a substantially circular hole in a patient, said circular stapler having a stapler body compression surface outer diameter at least one buttress adapted to self align onto the stapler body compression surface outer diameter;

wherein the buttress reinforces the hole created by the stapler in the patient when staples are applied.

61. The reinforcement device of claim 60 wherein the stapler includes an anvil that is larger in diameter than the circular hole that is created by the stapler.

62. The reinforcement device of claim 60 wherein the buttress comprises an essentially elastic material.

63. The reinforcement device of claim 60 wherein the buttress comprises an essentially inelastic material.

64. The reinforcement device of claim 60 wherein the buttress comprises at least one polymeric material.

- 65. The reinforcement device of claim 64 wherein the polymeric material comprises polytetrafluoroethylene.
- 66. The reinforcement device of claim 65 wherein the polytetrafluoroethylene is porous expanded polytetrafluoroethylene.
- 67. The reinforcement device of claim 60 wherein the buttress comprises a bioabsorbable material.
- 68. The reinforcement device of claim 67, wherein the bioabsorbable material comprises a copolymer of poly(glycolide:trimethylene carbonate).
- 69. The reinforcement device of claim 60 wherein the buttress includes a filler.
- 70. The reinforcement device of claim 69 wherein the filler includes a therapeutic agent.
- 71. The reinforcement device of claim 69 wherein the filler includes a bioactive agent.